

CLAIMS

1. A capacitive pressure sensing device comprising:
 - a base member;
 - 5 a diaphragm member deflectable under an external pressure;
 - a cantilever member disposed between the base member and the diaphragm member and supported on a support structure;
 - wherein the base member and the cantilever member form a capacitor structure of the device; and
 - 10 wherein deflection of the diaphragm member beyond a threshold value causes the cantilever member to deflect to cause a capacitive change in the capacitor structure.
2. The device as claimed in claim 1, further comprising a contact member moving relative to the cantilever member under deflection of the diaphragm member; and wherein the contact member contacts the cantilever member when the diaphragm member is deflected beyond the threshold value and causes deflection of the cantilever member.
- 20 3. The device as claimed in claim 2, wherein the contact member is disposed on the base member.
4. The device as claimed in any one of claims 1 to 3, wherein the support structure supporting the cantilever member is disposed on the diaphragm member.
- 25 5. The device as claimed in claim 2, wherein the contact member is disposed on the diaphragm member.
- 30 6. The device as claimed in claim 5, wherein the support structure supporting the cantilever member is disposed on the base member.
7. The device as claimed in any one of claims 2 to 6, wherein the contact member comprises a contact area disposed symmetrically around said support structure supporting the cantilever member.
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8. The device as claimed in any one of claims 1 to 7, wherein the support structure supporting the cantilever member centrally supports the cantilever member.

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9. The device as claimed in any one of claims 1 to 8, wherein the cantilever member comprises polysilicon.

10. The device as claimed in any one of claims 1 to 9, wherein the diaphragm member comprises polysilicon.

11. The device as claimed in any one of claims 1 to 10, wherein the base member comprises a silicon wafer.

15 12. The device as claimed in any one of claims 1 to 10, wherein the base member comprises a glass substrate.

13. The device as claimed in any one of claims 2 to 12, wherein the contact member comprises a nitride material.

20 14. A method of pressure sensing comprising:
deflecting a diaphragm member under an external pressure beyond a threshold value to cause a cantilever member to deflect under the influence of the diaphragm member; and
25 wherein deflection of the cantilever member causes a capacitive change in a capacitive structure including the cantilever member.

15. A method of fabricating a pressure sensing device comprising:
forming a base member;
30 forming a diaphragm member deflectable under an external pressure;
forming a cantilever member disposed between the base member and the diaphragm member and supported on a support structure;
wherein the base member and the cantilever member form a capacitor structure of the device; and

wherein deflection of the diaphragm member beyond a threshold value causes the cantilever member to deflect to cause a capacitive change in the capacitor structure.

5 16. The method as claimed in claim 15, wherein forming the cantilever member comprises utilising thin film deposition techniques and sacrificial etching techniques.

10 17. The method as claimed in claims 15 or 16, wherein forming the diaphragm member comprises utilising thin film deposition techniques and etching techniques.

18. The method as claimed in any one of claims 15 to 17, wherein forming the base member comprises providing a substrate.

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19. The method as claimed in claim 18, wherein forming the base member comprises etching the substrate.